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A SURVEY OF THE COST OF PRODUCING POTATOES IN THE SHAFTER-WASCO DISTRICT OF KERN COUNTY

By
Arthur Shultis

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A SURVEY OF THE COST OF PRODUCING POTATOES IN THE SHAFTER-WASCO DISTRICT OF KERN COUNTY

By Arthur Shultis[1]/

This report is the result of a survey requested by potato growers in the Shafter-Wasco area. The purpose of this survey was to discover as nearly as possible the inputs of labor, material, and the overhead costs in the production of potatoes so that growers would have data available to help in solving their management problems. The costs shown in this report are computed in the same manner as in the other enterprise efficiency studies carried on by the Agricultural Extension Service in many counties and with many crops. The cost items are, therefore, comparable with those shown by the studies on potatoes for this area in 1927 and 1928 and with those shown by the study in the Chino area in 1933.

This report is submitted in two parts. The first part comprises the actual costs for the 1933 crop, which are shown in detail in tables one to six. The second part is the estimate of costs for 1934, shown in tables seven and eight. The costs shown for 1933 were obtained by the survey method rather than by the monthly report method by which most of the enterprise efficiency study records are secured. Individual growers were interviewed and costs were obtained item by item, either from the memory of the grower or from his records. All estimates were checked to actual records from other sources and found to be within the reasonable range of such items.

The estimate of costs for 1934 is based upon the actual labor and material inputs for the 1933 crop computed at 1934 prices, with a few minor variations to make this estimate a more representative average for the district. Such variations are explained in Part II so that the reader may make further variations in computing a cost estimate under slightly different conditions. The costs in table seven are based on a yield of 200 sacks per acre which is about the average of the district, while table 8 shows the costs with varying yields.

Cost of production is an individual matter and varies widely from farm to farm and year to year. With any probable price of potatoes some growers will be able to make a profit and others will suffer a loss because of variations in their cost of production. But the cost of production of a sack of potatoes does not entirely determine the profitableness of the enterprise, since there is considerable variation in the average price for the season obtained by different growers. The price an individual receives is influenced by the quality of the product and the time and channel of sale as well as the general level of potato prices for the season. The object of the grower is to secure the greatest net return per acre of potatoes planted. This is accomplished by the most favorable relationship of the yield per acre, the average price per hundredweight, and the total cost per acre. Yield times price determines the income and income less cost determines the profit. Because of the time at which this survey was made, a study of prices and income had to be omitted so in this particular report, the economy of production of a sack of potatoes is taken as the best single measure of the efficiency of each individual enterprise.

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PART I. COSTS FOR 1933

Table 1. General Summary of Costs per Acre and per Hundredweight (Cwt.) 1933

Serial No.	Number of Acres	Costs per Acre										Average Yield, Cwt. per Acre	Average Total Cost per Cwt.
		Cultural Labor	Harvesting Labor	Total Labor Cost	Material Cost	Cash Overhead	Sub-total Cash Costs	Depreciation	Sub-total	Interest on Invest.	Total		
1	16	15.76	43.80	59.56	62.57	* 28.85	150.98	4.24	155.22	1.65	156.87	403	.39
2	19	14.55	46.17	60.72	61.31	* 28.92	150.95	7.13	158.08	3.37	161.45	400	.40
3	95	15.09	28.75	43.84	52.75	9.83	106.42	3.83	110.25	14.10	124.35	298	.42
4	4	12.25	35.16	47.41	48.90	12.32	108.63	6.51	115.14	17.04	132.18	275	.48
5	31	16.55	32.03	48.58	56.24	9.36	114.18	9.28	123.46	19.81	143.27	277	.51
6	9.5	15.65	35.50	51.15	62.70	11.90	125.75	5.74	131.49	17.96	149.45	285	.52
7	180	13.81	34.30	48.11	55.20	* 40.47	143.78	2.00	145.78	1.50	147.28	260	.57
8	45	19.06	41.89	60.95	59.10	* 40.65	160.70	4.80	165.50	3.84	169.34	295	.58
9	25	24.36	34.09	58.45	79.00	* 29.37	166.82	7.23	174.05	3.14	177.19	275	.64
10	80	19.95	34.50	54.45	65.20	* 42.98	162.63	2.00	164.63	1.50	166.13	240	.69
11	19	13.76	16.02	29.78	34.47	6.35	70.60	5.34	75.94	17.27	93.21	128	.73
Av.	523	16.44	34.74	51.18	57.95	23.72	132.85	5.28	138.13	9.20	147.33	285	.51

* Cash Overhead where marked with an asterisk includes rent at from $20 to $30 an acre. Where land is owned this item includes taxes, and for such enterprises interest on the value of the land is included as interest on investment.

The above table presents a general summary of the costs furnished for 11 potato enterprises along with a simple average of these costs at the bottom of the table. The enterprises are listed in order of economy of production per hundredweight which is shown in the last column. This is the best available measure of the profit making opportunities of these individual records.

Records number 1 and 11 were taken from actual detailed cost records by the author of this report. Record number 7 was taken from actual records by the operator and given to the author in summarized form. All the other records were compiled by the author from item by item cost estimates given by operators from memory. These figures, however, fall well within the range shown by actual records and should therefore be considered as fairly close to the actual cost that would have been determined if accurate records were kept. Interest and depreciation were computed from actual inventories taken in all cases except numbers 7 and 10 in which these items were estimated.

Table 1. General Summary of Costs per Acre and Per Hundredweight (Cwt.) 1958

Operation No.	Number of Acres	Costs per Acre										Average Total Cost per Cwt.	Yield per Acre Cwt.
		Cultural Labor	Material Labor	Cultural Cost	Material Cost	Overhead	Cash Costs	Non-Cash Costs	Labor Cost	Total Cost	Interest		
1	15	$6.76	$6.65	$14.41	$13.06	$ .96	$34.03	$ 1.10	$13.41	$35.13	$1.69	$ .88	40
2	4	14.82	14.82	24.82	24.82	1.24	64.88	1.24	29.64	66.12	3.88	1.65	40
3	12	8.25	8.25	17.25	17.25	1.03	43.78	1.03	16.50	44.81	2.63	1.12	40
4	8	5.63	5.63	14.63	14.63	.88	39.76	.88	11.26	40.64	2.39	1.02	40
5	10	4.50	4.50	13.50	13.50	.81	36.81	.81	9.00	37.62	2.21	.94	40
6	6	3.75	3.75	12.75	12.75	.77	34.77	.77	7.50	35.54	2.09	.89	40
7	5	3.20	3.20	12.20	12.20	.73	33.33	.73	6.40	34.06	2.00	.85	40
8	3	2.81	2.81	11.81	11.81	.71	32.24	.71	5.62	32.95	1.94	.82	40
9	2	2.50	2.50	11.50	11.50	.69	31.39	.69	5.00	32.08	1.89	.80	40
10	1	2.25	2.25	11.25	11.25	.68	30.68	.68	4.50	31.36	1.84	.78	40
11	1	2.05	2.05	11.05	11.05	.66	30.06	.66	4.10	30.72	1.81	.77	40
12	1	1.88	1.88	10.88	10.88	.65	29.52	.65	3.76	30.17	1.77	.75	40
13	1	1.73	1.73	10.73	10.73	.64	29.03	.64	3.46	29.67	1.74	.74	40
14	1	1.61	1.61	10.61	10.61	.64	28.64	.64	3.22	29.28	1.72	.73	40
15	1	1.50	1.50	10.50	10.50	.63	28.26	.63	3.00	28.89	1.69	.72	40
16	1	1.41	1.41	10.41	10.41	.62	27.94	.62	2.82	28.56	1.67	.71	40
17	1	1.33	1.33	10.33	10.33	.62	27.66	.62	2.66	28.28	1.66	.71	40
18	1	1.26	1.26	10.26	10.26	.61	27.39	.61	2.52	28.00	1.64	.70	40
19	1	1.20	1.20	10.20	10.20	.61	27.21	.61	2.40	27.82	1.63	.70	40
20	1	1.15	1.15	10.15	10.15	.61	27.06	.61	2.30	27.67	1.62	.69	40
21	1	1.10	1.10	10.10	10.10	.60	26.90	.60	2.20	27.50	1.61	.69	40
22	1	1.06	1.06	10.06	10.06	.60	26.78	.60	2.12	27.38	1.60	.68	40
23	1	1.02	1.02	10.02	10.02	.60	26.66	.60	2.04	27.26	1.60	.68	40
24	1	.99	.99	9.99	9.99	.60	26.57	.60	1.98	27.17	1.59	.68	40
25	1	.96	.96	9.96	9.96	.59	26.47	.59	1.92	27.07	1.58	.68	40
26	1	.93	.93	9.93	9.93	.59	26.39	.59	1.86	26.98	1.58	.67	40
27	1	.90	.90	9.90	9.90	.59	26.31	.59	1.80	26.90	1.57	.67	40
28	1	.88	.88	9.88	9.88	.59	26.25	.59	1.76	26.84	1.57	.67	40
29	1	.86	.86	9.86	9.86	.59	26.19	.59	1.72	26.78	1.56	.67	40
30	1	.84	.84	9.84	9.84	.58	26.10	.58	1.68	26.68	1.56	.66	40
31	1	.82	.82	9.82	9.82	.58	26.04	.58	1.64	26.62	1.55	.66	40
32	1	.80	.80	9.80	9.80	.58	25.98	.58	1.60	26.56	1.55	.66	40
33	1	.78	.78	9.78	9.78	.58	25.92	.58	1.56	26.50	1.55	.66	40
34	1	.77	.77	9.77	9.77	.58	25.87	.58	1.54	26.45	1.54	.66	40
35	1	.75	.75	9.75	9.75	.58	25.83	.58	1.50	26.41	1.54	.66	40
36	1	.74	.74	9.74	9.74	.58	25.78	.58	1.48	26.36	1.54	.66	40
37	1	.73	.73	9.73	9.73	.58	25.74	.58	1.46	26.32	1.54	.66	40
38	1	.72	.72	9.72	9.72	.58	25.70	.58	1.44	26.28	1.53	.66	40
39	1	.71	.71	9.71	9.71	.58	25.66	.58	1.42	26.24	1.53	.66	40
40	1	.70	.70	9.70	9.70	.58	25.62	.58	1.40	26.20	1.53	.66	40

Costs per Acre

Average Total Cost per Cwt. 66¢

Yield per Acre 40 Cwt.

Average Interest Charge $1.53

Average Total Cost per Acre $26.20

Average Labor Cost $1.40

Average Non-Cash Cost $ .58

Average Cash Costs $25.62

Average Overhead $ .58

Average Material Labor $ .70

Average Cultural Labor $ .70

Average Material Cost $9.70

Average Cultural Cost $9.70

Average Labor Cost $1.40

Average Number of Acres 1

Average Total Cost per Cwt. 66¢

Average

Table 2. Labor Costs in Detail, 1933

	Per Cent Reporting Operation	Cost per Acre	Cost per Cwt.
Preparing soil and planting cover crop	18%	.56	
Irrigating cover crop or irrigating before planting	36%	.84	
Applying barnyard manure, labor only	36%	1.96	
Plowing - once only, 82%; twice, 18%	all	2.56	
Other tillage before planting	all	2.02	
Average total preparation for planting	all	5.52	
Dipping seed, including material, average 8¢ per sack	all	1.05	
Cutting seed, 13 sacks at 9¢	all	1.20	
Planting	all	1.91	
Furrowing and cultivation	all	2.10	
Hoeing	9%	1.50	
Irrigation	all	4.37	
Miscellaneous cultural labor	18%	1.90	
Average total cultural labor up to harvesting	all	16.44	.06
Digging	all	3.59	.01
Picking including supervision where furnished	all	20.03	.07
Hauling and loading on cars	all	11.12	.04
Average total labor cost per acre	all	51.18	.18

The above table shows the average labor cost for each operation where that operation is reported. Since not all operations were performed on each planting, the average totals shown are less than a sum of the separate operations.

The above labor costs are composed of the value of the operator's labor at going wage rates, the cost of hired labor, and the cost or value of horse, tractor, and truck work. For each operation the method used and the hours of man labor and field power were first secured. The rate per hour actually paid was then applied to compute the value of the man labor whether hired or performed by the farmer himself. Wage rates used for various operations varied from 20 to 40 cents an hour, 25 cents being about average. Dipping cost, which includes material, varied from 3½ to 15 cents a sack. Cutting averaged about 9 cents a sack with from 11 to 15 sacks per acre being used.

Tractor work was charged at a rate sufficient to cover operating, maintenance, and overhead costs. The rate for each tractor was decided by the interviewer and operator after taking into account the make, size, cost, annual hours of use, and a schedule of average tractor operating costs. The rates varied from 70 cents to $2.00 an hour. The hourly rate for horse labor was 10 cents an hour (20 cents for a two-horse team) which seemed to fit computed costs in all cases. A rate for truck work was determined as for tractor work, although most of the hauling was hired on a contract basis.

Table 8. Labor Costs in Detail, 1933

	Per Cent Reporting Operation	Cost per Acre	Cost per Cwt.
Preparing soil and planting cover crop	18%	.56	
Irrigating cover crop or irrigating before planting	36%	.84	
Applying barnyard manure, labor only	38%	1.96	
Plowing - once only, 85%; twice, 12%	all	2.50	
Other tillage before planting	all	2.02	
Average total preparation for planting	all	5.88	
Dipping seed, including material, average 8¢ per sack	all	1.05	
Cutting seed, 15 sacks at 8¢	all	1.20	
Planting	all	1.91	
Harrowing and cultivation	all	2.10	
Hoeing	8%	1.50	
Irrigation	all	4.27	
Miscellaneous cultural labor	18%	1.90	
Average total cultural labor up to harvesting	all	16.46	.06
Digging	all	3.59	.01
Picking including supervision where furnished	all	20.03	.07
Hauling and loading on cars	all	11.12	.04
Average total labor cost per acre	all	51.19	.18

The above table shows the average labor cost for each operation where that operation is reported. Since not all operations were performed on each planting, the average totals shown are less than a sum of the separate operations.

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Table 3. Material Costs in 1933

	Per Cent Reporting	Cost per Acre	Cost per Cwt.
Cover crop seed, where used	18%	.55	
Barnyard manure, average use 6 loads per acre	36%	7.14	
Power for pumping irrigation water	all	9.21	
Seed, average 13 sacks per acre at $1.59	all	20.65	
Sacks and twine, average 285 at 6.8¢	all	19.48	.07
Fertilizer, ammonium sulfate, av. 444# at 1.44 cwt.	all	6.41	
Average total material cost		57.95	.20

The average cost of material where the use of that material took place is shown in table 3. All plantings had expenditures for all the materials shown except cover crop seed and manure. Where barnyard manure was used there was slightly less ammonium sulfate applied but in general the use of manure is additional to the regular application of commercial fertilizer rather than in place of it. The quantities used, as well as unit prices, are shown above for everything except irrigation water. The power cost for pumping was generally based on the season's average power cost per acre for the pumping plant used, although in some cases potatoes might have received more water than other crops such as cotton.

Table 4. Cash Overhead Costs

	Per Cent Reporting	Cost per Acre	Cost per Cwt.
General expense	all	5.46	
County taxes, as paid by owners	44%	2.80	
County taxes, as paid by renters	56%	.26	
Machinery repairs	91%	2.38	
Compensation insurance	64%	.50	
Rent, where land was rented	56%	24.93	
Average total cash overhead costs	all	23.72	.08

Table 4 shows cash overhead costs in potato growing. The first item, general expense, is computed at 5% of the total labor and material costs previously shown and is included to cover miscellaneous small overhead costs. Among such costs should be office expense, the use of the operator's personal automobile for the potato enterprise, interest on operating capital, and, in case of larger enterprises, some management expenses. Actual records have shown that 5% will about cover such costs in the majority of such cases.

In these enterprises those renting land furnish all their own equipment even to irrigation facilities so have taxes on equipment to pay as well as rent and also have considerable depreciation and interest on their investment. Those owning their land have about $2.50 an acre more taxes and about $14 more interest on investment in place of the $25 rent per acre, thus indicating it is cheaper to own land than to rent it.

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Table 5. Investment, Depreciation, and Interest on Investment per Acre

	Original Cost	Average Investment	Depreciation	Interest on Investment
Buildings for housing, help, equipment, etc.	12.90	6.45	.53	.38
Irrigation system, well, pipe, pumps, etc.	55.16	27.58	3.59	1.65
Tillage equipment	4.68	2.34	.54	.14
Planting and dipping equipment	5.74	2.87	.57	.17
Digging equipment	4.32	2.16	.62	.13
Miscellaneous small tools and equipment	1.08	.54	.14	.03
Sub-total	83.88	41.94	5.99	2.50
Land, where owned	400.00	230.00	-	13.80
Sub-total	483.88	271.94	5.99	16.30
Tractors, trucks, horses, and harness	7.28	3.64	2.38	.22
Grand total	491.16	275.58	8.37	16.52

Table 5 is a summarization of the interest and depreciation involved in the nine out of eleven records covered by this report upon which complete inventories were secured. These figures are group summaries of many individual items upon which the per acre investments and depreciation were figured separately. The average investment for all equipment and improvements upon which depreciation is charged was taken as half of the reported original cost because over the life of each facility, its value declines from cost to nothing. Depreciation is that part of a capital outlay which is used up by or is chargeable to one year's business. It is as much a cash cost as any material cost although such outlays are generally made years in advance and reoccur only when facilities must be replaced. Interest on the average investment shown was computed at 6% and is included as the cost of invested capital part of which may be the operator's and part of which may be borrowed.

Table 6. Recapitulation of All Costs for 1933

	Cost per Acre	Cost per Cwt.
Cultural labor	16.44	.06
Digging	3.59	.01
Picking and sewing sacks, including supervision	20.03	.07
Hauling and loading	11.12	.04
Total labor	51.18	.18
Total material	57.95	.20
Cash overhead cost	23.72	.08
Total cash costs	132.85	.46
Depreciation	5.28	.02
Sub-total - cash and depreciation	138.13	.48
Interest on investment	9.20	.03
Total all costs	147.33	.51
Total all costs up to harvesting	93.11	.32
Digging	3.59	.01
Picking and sewing sacks	20.03	.07
Hauling	11.12	.04
Sacks and twine	19.48	.07
Total all costs	147.33	.51

The above table shows an average of costs in eleven potato enterprises for 1933.

PART II

AN ESTIMATE OF COSTS FOR 1934

The year 1933 was a season during which costs involved in the growing of potatoes were lower than normal or usual. Wage rates, fertilizer, seed, and sacks were all lower than those prevailing in 1934. There was expressed by many of the growers a desire for a set of costs based upon costs and prevailing conditions in 1934. Such a set of costs is presented in table 7. It is not yet known what the yields will be so this table was based on 200 sacks per acre which is close to the average for the district the last few years. Table 8, however, shows the variations in cost per acre and per hundredweight with varying yields.

The labor and materials used in computing the cost estimate in table 7 are the same as shown by the 1933 records except where changes had to be made to suit the estimate to a single unified management system. In 1933 there was enough rainfall before plowing so that little or no pre-planting irrigation was required. It must be provided in 1934. Some of the growers used cover crops and barnyard manure in 1933 and some have in 1934, but the estimate omits all items not usually involved. Tractors used varied in size and type. The tractor work rates and costs for the 1934 estimates are those appearing with greatest frequency in 1933; namely, the 15 drawbar horsepower wheel tractor used about 800 hours a year on about 100 acres, which would result in a total operation and overhead cost of 90¢ an hour.

In many cases the wage rates being paid and estimated for the balance of 1934 are higher than in 1933, so 30¢ an hour was used for tractor driving and 25¢ for the balance of the labor, with slightly higher contract rates for cutting, picking, hauling, and loading than prevailed in 1933.

Table 7 shows with a 200-sack yield that about 120 hours of man labor are involved in the production and harvesting of an acre of potatoes. The cultural labor and digging would be very little more if the yield were much greater although the picking and hauling would increase with the yield. To show variations in costs and labor requirements for varying yields, table 8 has been prepared. It is based on the costs shown in table 7, except for differences in harvesting and sack costs and in general expense.

Table 7. An Estimate of Costs for 1934 Conditions.

Labor Costs	Hours per Acre*				Total Cost per Acre	Cost per Cwt.
	Man	Horse	Tractor	Truck		
Disk after previous crop or before plowing	.5		.5		.60	.003
Irrigate before plowing	4.0				1.00	.005
Plow	2.0		2.0		2.40	.012
Disk, harrow, and float	2.0		2.0		2.40	.012
Total land preparation	8.5		4.5		6.40	.032
Dipping - labor only	3.0				.75	.004
Cutting - 9¢ + 1¢ supervision 13 sacks	5.0				1.30	.006
Hauling seed and fertilizer	1.0	2			.45	.002
Planting seed and fertilizer	3.0		1.5		2.25	.011
Furrow twice with cultivator	4.0	8			1.80	.009
Cultivate once	2.0	4			.90	.005
Irrigate	18.0				4.50	.023
Total cultural labor	44.5	14	6.0		18.35	.092
Digging	6.0		2.5		4.05	.020
Picking 8¢ a sack and supervision ½¢ a sack	55.0				17.00	.085
Sewing sacks at 1¢ a sack	4.0				2.00	.010
Hauling 10 tons at 75¢	7.5			2.5	7.50	.038
Loading on cars	4.5				2.25	.011
Weighing	-				1.50	.007
Total harvesting labor	77.0		2.5	2.5	34.30	.171
Total labor cost per acre	121.5	14	8.5	2.5	52.65	.263
Material Costs	**Quantity**		**Unit Price**			
Irrigation power for pumping					10.00	.050
Seed potatoes	13 sacks		$2.25		29.25	.146
Materials for dipping for 13 sacks			.025		.33	.002
Fertilizer, $37.50 per ton	500 lbs.		1.875		9.38	.047
Sacks and twine	200		.11		22.00	.110
Total material cost					70.96	.355
Cash Overhead Cost						
General expense, 5% of labor and material ($123.61)					6.18	.031
County taxes on land, equipment, and improvements					2.00	.010
Machinery repairs					2.50	.012
Compensation insurance					.75	.004
Total cash overhead cost					11.43	.057
Total depreciation (based on Table 5)					6.00	.030
Sub-total all cash costs and depreciation					141.04	.705
Interest on investment, improvements, and equipment					2.50	.012
Interest on value of land ($230 an acre)					13.80	.069
Total all costs					157.34	.786

The above table presents an estimate of costs of producing potatoes in 1934. This table is based upon the 1933 records insofar as possible as well as upon actual 1934 cost records for the early part of the 1934 season and estimates of growers given the author of this report.

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* Labor costs are based upon wages of man labor for tractor operation at 30 cents an hour, other labor at 25 cents, horse labor at 10 cents a horse hour, and tractor work at 90 cents an hour for a 15 drawbar horsepower wheel tractor. Estimates of costs of piece work and contract operations are shown in the table.

Table 7. An Estimate of Costs for 1934 Conditions.

Labor Costs	Hours per Acre*			Total Cost per Acre	Cost per Unit
	Man	Horse	Tractor		
Disk after previous crop or before plowing	.5		.8	.60	.003
Irrigate before plowing	4.0			1.00	.005
Plow	2.0		8.0	8.40	.042
Disk, harrow, and float	2.0		3.0	3.40	.018
Total land preparation	8.5		4.8	6.40	.032
Dipping - labor only	3.0			.75	.004
Cutting - 9# + 1# supervision 13 sacks	5.0			1.30	.006
Hauling seed and fertilizer	1.0	2		.45	.002
Planting seed and fertilizer	3.0		1.5	2.25	.011
Furrow twice with cultivator	4.0	8		1.80	.009
Cultivate once	2.0	4		.90	.002
Irrigate	18.0			4.50	.023
Total cultural labor	44.5	14	6.0	18.35	.092
Digging	6.0		8.0	4.05	.020
Picking 8# a sack and supervision 4# a sack	52.0			17.00	.085
Bowing sacks at 1¢ a sack	4.0			2.00	.010
Hauling 10 tons at 75¢	7.5		5.0	7.50	.038
Loading on cars	4.5			2.25	.011
Weighing	-			1.50	.007
Total harvesting labor	77.0		8.0	34.30	.171
Total labor cost per acre	129.5	14	8.8	58.65	.293
Material Costs	Quantity	Unit Price			
Irrigation power for pumping				10.00	.050
Seed potatoes	12 sacks	$2.25		29.25	.146
Materials for dipping for 13 sacks		.025		.35	.002
Fertilizer, $37.50 per ton	500 lbs.	1.875		9.38	.047
Sacks and twine	250	.11		28.00	.140
Total material cost				76.98	.385
Cash Overhead Costs					
General expense, 5% of labor and material ($129.61)				6.48	.032
County taxes on land, equipment, and improvements				2.00	.010
Machinery repairs				2.50	.012
Compensation insurance				.75	.004
Total cash overhead cost				11.73	.058
Total depreciation (Based on Table 5)				6.00	.030
Sub-total all cash costs and depreciation				141.04	.705
Interest on investment, improvements, and equipment				2.50	.012
Interest on value of land ($250 an acre)				13.80	.069
Total all costs				157.34	.786

The above table presents an estimate of costs of producing potatoes in 1934. This table is based upon the 1932 records insofar as possible as well as upon actual 1934 cost records for the early part of the 1934 season and estimates of growers given the author of this report.

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* Labor costs are based upon wages of man labor for tractor operation at 30 cents an hour, other labor at 25 cents, horse labor at 10 cents a horse hour, and tractor work at 90 cents an hour for a 15 drawbar horsepower wheel tractor. Estimates of costs of place work and contract operations are shown in the table.

Table 8. An Estimate of Costs in 1934 for Potatoes with Varying Yields

	Yield, Sacks or Hundredweight per Acre							
	50	100	150	200	250	300	350	400
All costs per acre up to picking, and sacks (digging included)	$103.14	$103.79	$104.44	$105.09	$105.74	$106.39	$107.04	$107.69
Picking at 8.5¢ per sack	4.25	8.50	12.75	17.00	21.25	25.50	29.75	34.00
Sewing at 1¢ per sack	.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00
Hauling at 75¢ per ton	1.88	3.75	5.63	7.50	9.38	11.25	13.13	15.00
Loading at 22½¢ per ton	.56	1.13	1.69	2.25	2.81	3.38	3.94	4.50
Weighing at 15¢ per ton	.38	.75	1.13	1.50	1.88	2.25	2.63	3.00
Sacks and twine at 11¢ each	5.50	11.00	16.50	22.00	27.50	33.00	38.50	44.00
Total cost per acre	116.21	129.92	143.64	157.34	171.06	184.77	198.49	212.19
Average total cost per sack	2.32	1.30	.96	.79	.68	.61	.57	.53
Hours of man labor per acre	68.2	86.0	103.8	121.5	139.3	157.0	174.8	192.5
Hours of man labor per sack	1.36	.86	.69	.61	.56	.52	.50	.48
All costs other than man labor per acre	$ 96.61	104.07	111.54	118.99	126.46	133.92	141.39	149.44
All costs other than man labor per sack	1.94	1.04	.74	.59	.51	.45	.40	.37

Table 8 shows the variations in cost per acre and cost per hundredweight with varying yields. All costs per acre are taken as shown in table 7 except harvesting, sack, and cash overhead costs which would vary with the yield per acre. Harvesting and sack costs are taken at the costs per hundredweight shown in table 7.

The hours of man labor shown cover all operations except weighing - the hours for cultural operations and digging being the same as the hours shown per acre in table 7 and harvesting labor is the same in hours per hundredweight.

Table 6. An Estimate of Costs in 1974 for Potatoes with Yields Varying from 100 to 400 Bushels per Acre

	Yield, Bushels per Acre						
	100	200	300	400	500	600	800
All costs except those in planting, and seeds	$105.74	$170.00	$234.26	$298.52	$362.78	$427.04	$555.56
(although included at $.25 per bushel)	4.25	8.50	12.75	17.00	21.25	25.50	34.00
Planting at $.75 per acre	.75	1.50	2.25	3.00	3.75	4.50	6.00
Insecticide at $.25 per acre	.25	.50	.75	1.00	1.25	1.50	2.00
Fertilizing at $.75 per acre	.75	1.50	2.25	3.00	3.75	4.50	6.00
Irrigation at $12.50 per acre	12.50	25.00	37.50	50.00	62.50	75.00	100.00
Seeds and Plants at $.25 per bushel	25.00	50.00	75.00	100.00	125.00	150.00	200.00
Harvesting and Marketing	63.49	126.98	190.47	253.96	317.45	380.94	507.92
Total Cost Per Acre	213.98	384.48	554.98	725.48	895.98	1066.48	1407.48
Average Total Cost Per Bushel	2.14	1.92	1.85	1.81	1.79	1.78	1.76
Income Per Acre Before Taxes	186.02	315.52	445.02	574.52	704.02	833.52	1092.52
Income Per Acre After Taxes	186.02	315.52	445.02	574.52	704.02	833.52	1092.52
All costs other than Labor per acre	105.74	170.00	234.26	298.52	362.78	427.04	555.56
Income Per Acre Before Labor	293.76	485.52	679.28	873.04	1066.80	1260.56	1648.08
Income Per Acre After Labor	187.76	315.52	445.02	574.52	704.02	833.52	1092.52

Table 6 shows the results in cost per acre and cost per bushel with yields varying from 100 to 400 bushels per acre. Income is shown before and after taxes. Income before labor is shown in order to show the amount of money available to pay for labor. Income after labor is shown to show the amount of money available to pay for management and risk. Costs are shown at the 100 bushel yield level.

The income per acre before taxes and labor is $293.76 and the income per acre after taxes and labor is $187.76. Income before labor is shown to show the amount of money available to pay for management and risk. Income after labor is shown to show the amount of money available to pay for management.